Revised 08/03

CORRES. CONTROL
INCOMING LTR NO.
00826 RF03

DUE DATE
ACTION

Department of Energy

ROCKY FLATS FIELD OFFICE
10808 HIGHWAY 93, UNIT A
GOLDEN, COLORADO 80403-8200

SEP 03 2003

RECEIVED
2003 SEP -4 P 3:
CORRESPONDENCE
CONTROL

03-DOE-01218

DIST.	LTR	ENC
BERARDINI, J. H.	X	X
BOGNAR, E. S.	X	X
BROOKS, L.	X	X
BUTLER, L.		
CROCKETT, G. A.		
DECK, C. A.	X	X
DEGENHART, K. R.		
DIETER, T. J.	X	X
DIETERLE, S. E.		
FERRERA, D. W.	X	X
GIACOMINI, J. J.		
ISOM, J. H.		
LINDSAY, D. C.	X	X
LONG, J. W.		
LYLE, J. L.		
MARTINEZ, L. A.	X	X
NAGEL, R. E.	X	X
NORTH, K.		
PARKER, A. M.	X	X
RODGERS, A. D.		
SHELTON, D. C.	X	X
SPEARS, M. S.		
SWARTZ, J. M.		
TRICE, K. D.		
TUOR, N. R.	X	X
WILLIAMS, J. L.		

COR. CONTROL	X	X
ADMN. RECORD	X	X
PATS/130		

Reviewed for Addressee
Corres. Control RFP

9/4/03 Date lcg By

Ref. Ltr. #

DOE ORDER #
NONE

Y2

Mr. Steven H. Gunderson
Rocky Flats Cleanup Agreement Project Coordinator
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

Dear Mr. Gunderson:

The purpose of this letter is to transmit the Pre-Demolition Survey Report - Buildings 710 and 781, confirming their classification as Type 1 as stated in the Building 776/777 Closure Project Decommissioning Operations Plan. Approval of this characterization report is requested within two weeks of receipt in order to allow demolition of Building 710 by the end of September 2003. Please feel free to direct any questions to John Schneider at (303) 966-5924 or Gary Schuetz at (303) 966-3016.

Sincerely,

Joseph A. Legare
Assistant Manager
for Environment and Stewardship

Enclosure

cc w/Encl.:
J. Schneider, AAMP, RFFO
G. Schuetz, FCWM, RFFO
T. Rehder, USEPA
E. Kray, CDPHE
T. Dieter, K-H
Administrative Record

cc w/o Encl.:
E. Schmitt, OOM, RFFO

DOES NOT CONTAIN
OFFICIAL USE ONLY INFORMATION
Name/Org Sharon Nagle/DOE Date 11/5/08
Directed by: J.A. Nesheim DOE M471.3-1

MAIN RECORD
~~B776-A-000151~~
B776-A-000152

Rocky Flats Environmental Technology Site

PRE-DEMOLITION SURVEY REPORT (PDSR)

BUILDINGS 710, 781

776/777 CLOSURE PROJECT

REVISION 1

August 19th, 2003

Y56

PRE-DEMOLITION SURVEY REPORT (PDSR)

BUILDINGS 710 & 781

776/777 CLOSURE PROJECT

REVISION 1

Written by: _____ Date: Aug 19, 2003

Richard Lesser, 707/776/777 Environmental Compliance

Reviewed by: _____ Date: 8/19/03

Terry Vaughn, 707/776/777 Radiological Manager

Reviewed by: _____ Date: 8/19/03

Chris Gilbreath, 707/776/777 Environmental Compliance Manager

Approved by: _____ Date: 8/19/03

Tyke Bodkin, KH Project Manager

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ATTACHMENTS

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ABBREVIATIONS/ACRONYMS

ACM	Asbestos containing material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U.S. Department of Energy
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U.S. Environmental Protection Agency
HWMU	Hazardous Waste Management Unit
KH	Kaiser-Hill
LBP	Lead-based paint
OSHA	Occupational Safety and Health Administration
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
QC	Quality Control
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report

1 EXECUTIVE SUMMARY

A Pre-Demolition Survey (PDS) has been performed to enable compliant disposition and waste management of Buildings 710 and 781. The PDS encompassed radiological and chemical characterization pursuant to the D&D Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). The characterization built upon physical, chemical and radiological hazards identified in the *Building 776 / 777 Reconnaissance Level Characterization Report,* August 28, 1998.

Results indicate that no radiological contamination exists in excess of the prescribed release limits of DOE Order 5400.5. No asbestos has been identified in the buildings. Facility surfaces may contain paints with PCBs and metals. There are no records of Hazardous Waste Management Units (HWMUs) within the buildings. All demolition debris will be managed in compliance with regulations governing potential PCB bulk product wastes (40 CFR 761), and RFETS Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal* as applicable.

To ensure that the facility remains free of contamination and that PDS data remain valid, isolation controls will be established and posted accordingly. Demolition shall not occur until the PDS Report is submitted to and approved by the Colorado Department of Public Health and Environment (CDPHE).

These buildings may be classified as Type I buildings under the Rocky Flats Cleanup Agreement (RFCA).

2 INTRODUCTION

Buildings 710 and 781 are part of the Building 776/777 cluster. These two satellite buildings are located adjacent to the northwest and southeast corners of Building 776/777, respectively, and had been included in the radiological surveys for Building 776/777's Cooling Tower Pre Demolition Survey Report (PDSR) in 2001. The Cooling Tower PDSR indicated that confirmation of Building 710 and 781's Reconnaissance Level Characterization Report (RLCR) status as "Type 1", or "free of contamination", need be accomplished in a separate document as these two buildings were not to be demolished with the cooling towers.

Building 710 is scheduled for demolition in the fourth calendar quarter of 2003. Therefore, confirmation of its RLCR's proposed classification as "Type 1" must be completed. In addition, it is convenient to confirm Building 781's proposed classification as "Type 1" now that all isolations are complete and mechanical equipment and chemicals have been removed. Building 781 is not scheduled for demolition in this calendar year, but rather is scheduled for demolition at the same time as Building 776/777.

This document collates and presents the radiological PDS results from the 2001 Cooling Towers PDSR, as well as additional beryllium results as required by the state of Colorado's Public Health and the Environment (CDPHE).

Both the radiological and beryllium characterizations were conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP).

2.1 Purpose

The purpose of this report is to confirm that Buildings 710 and 781 are "Type 1", "free of contamination".

2.2 Scope

This report presents the final radiological and chemical conditions of Buildings 710 and 781.

2.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this PDS were the same DQOs identified in the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP).

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

The buildings subject to this report were characterized to confirm that the structures meet unrestricted release criteria per the PDSP.

Attachment A presents the original characterization scope as agreed to by CDPHE and the Department of Energy (DOE).

Attachment B presents the radiological results from Buildings 710 and 781. The radiological results obtained at the time the cooling towers were to be demolished indicated that additional sampling was required to meet the requirements of RFETS' PDSP.

Attachment C presents the transmittal letter for and excerpts from the final cooling tower PDSR.

Attachment D presents additional radiological results from the supplemental coupon samples associated with the survey unit that enveloped Building 710.

These data, obtained pursuant to the DDCP and RLCP, establish that no "DOE-added" radiological contamination is present in the Buildings 710 and 781.

Attachment E presents CDPHE's concurrence that the radiological results indicate that there was no added contamination in the survey units that included Buildings 710 and 781.

4 CHEMICAL CHARACTERIZATION AND HAZARDS

The buildings subject to this report were characterized for chemical hazards in the 1998 RLCR. The four chemical hazards identified are addressed below.

4.1 Hazardous Constituents

Review of Rocky Flats database WEMS established that no Hazardous Waste Management Units (HWMUs) were established in Buildings 710 and 781.[1] In addition, these buildings' Reconnaissance Level Characterization Report, which presented the results of extensive personnel interviews and records searches, did not indicate the presence of HWMUs.

The buildings currently contain light bulbs that must eventually be handled as universal wastes.

4.2 Asbestos

A CDPHE-certified asbestos inspector previously performed an asbestos inspection of the B776/777 complex. The results of the characterization are part of Building 776/777's administrative record, and establish that no regulated asbestos is present in Building 710. For this report, a CDPHE-certified asbestos inspector conducted a separate walk-down of Building 781, and no regulated asbestos was observed to be present.

4.3 Beryllium (Be)

As required, beryllium swipes were obtained from vertical and horizontal surfaces most likely to harbor beryllium contamination. No beryllium was detected above the method detection limit, where the detection limit was below the most recently published DOE beryllium standards.

4.4 Lead Based Paint (LBP) and Polychlorinated Biphenyl Paint (PCB paint)

RFETS Environmental Waste Compliance Guidance #27, *Lead-based Paint (LBP) and LBP Debris Disposal*, states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) wastes, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal. Therefore, no sampling for heavy metals based paints was needed or conducted.

Based on process knowledge and personnel interviews, there is no reasonable likelihood for PCBs (except for PCB bulk product wastes) to be present. Therefore, no PCB sampling and analysis was conducted. RFETS Environmental Waste Compliance Guidance #25, *Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition*, has directed that applied dried paints, varnishes, waxes, or other similar coatings or sealants are acceptable for disposal (with

[1] HWMUs include areas used for universal waste treatment/storage, satellite waste storage, < 90 day waste storage, interim status units, fully permitted Hazardous Waste Management Units, as well as areas for Remediation Waste management.

notification) without sampling in a non-hazardous solid waste landfill as potential PCB Bulk Product Waste under 40 CFR 761.3 and 40 CFR 761.62 (b). Current plans are to dispose of the demolition debris in an off-site, non-hazardous solid waste landfill as potential PCB Bulk Product Waste.

5 PHYSICAL HAZARDS

Physical hazards associated with the buildings subject to this report consist of those common to standard industrial environments and include hazards associated with energized systems (such as electricity associated with incandescent light bulbs), utilities, and trips and falls. Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practices.

6 DATA QUALITY ASSESSMENT

Adequate data quality for decision-making is required by the Kaiser-Hill Team Quality Assurance Program (KH, 1997, §7.1.4 and 7.2.2), the DOE (Order 414.1, Quality Assurance, §4.b.(2)(b)), and the Regulators (EPA Region VIII and the CDPHE). The data presented in this report were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original DQOs of the project.

The DQA process corroborated that the following elements of the characterization process were adequate:

- the *number* of samples and surveys;
- the *types* of samples and surveys;
- the sampling/survey process, in the field; and,
- the laboratory analytical process, relative to accuracy and precision considerations.

7 CONCLUSIONS

The PDS of Buildings 710 and 781 was performed in accordance with the DDCP and PDSP. All PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. The buildings subject to this report do not contain radiological or hazardous wastes, with the exception of non-radiological lighting (lead, mercury, and PCBs). Waste lamps, if not reusable, will be managed as CERCLA remediation wastes per the substantive aspects of the universal hazardous waste standards. All potential PCB bearing demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), as applicable, in accordance with the Decommissioning Program Plan, Section 3.3.5. Asbestos is not present, and the appropriate Demolition Permit Application as required by the state of Colorado's Reg. 8 will be filed at least ten days prior to demolition. To ensure that the buildings subject to this report remain free of contamination and that PDS

data remain valid, isolation controls will have been established, and the facility has been posted accordingly.

8 REFERENCES

DOE/RFFO, CDPHE, EPA, 1996. Rocky Flats Cleanup Agreement (RFCA), July 19, 1996.

DOE Order 5400.5, "Radiation Protection of the Public and the Environment."

DOE Order 414.1A, "Quality Assurance."

KH, 1997. "Kaiser-Hill Team Quality Assurance Program", Rev. 5, December, 1997.

KH, 1999. Decontamination and Decommissioning Characterization Protocol, MAN-077-DDCP, Rev. 1, June 19, 2000.

KH, 1999. Decommissioning Program Plan, June 21, 1999.

KH, 2000. Pre-Demolition Survey Plan, MAN-127-PDSP, Rev. 0, March 26, 2001.

RFETS, Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition, April 14, 1999.

RFETS, Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and LBP Debris Disposal, June 4, 1999.

776 / 777 Reconnaissance Level Characterization Report, Rev 0, August 28, 1998

Attachment A

Scoping Package

Unit 776002: Building 710 with Buildings 702 and 712A

Unit 776005: Building 781 with Buildings 703 and 713A

Source: Original survey package

ROCKY FLATS
ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL AND NON – RADIOLOGICAL CHARACTERIZATION PACKAGE FOR BUILDING 776 / 777'S SATELLITE BUILDINGS

Responsible Organization: Environmental Compliance Effective Date: _____

Ted A. Hopkins / _____

Environmental Compliance Manager *Approval Signature*

NA

Print Name of Responsible Manager (N/A if RM is Approval Authority)

REVIEWED FOR CLASSIFICATION/ UCNI

By: _____

Date: _____

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1. EXECUTIVE SUMMARY

This Radiological and Non – Radiological Characterization Package for Building 776 / 777's Type 1 Satellite Buildings summarizes the contaminants of concern requiring characterization by sampling and analysis. This list is based upon findings in the 1998 Building 776 / 777 Reconnaissance Level Characterization Report (RLCR), on – going surveillances by 776 / 777's environmental compliance personnel, and the most recent site management documents.

The 1998 Reconnaissance Level Characterization Report, the RFETS' D&D Characterization Protocol (D&DCP), the site – wide Reconnaissance Level Characterization Plan (RLCP), the site – wide Pre – Demolition Survey Plan (PDSP), and site – wide Environmental Leadership team (ELT) guidances establish that additional sampling for 1) lead and other heavy metals in paint and/or on building surfaces, 2) PCBs in paint and ballasts and/or on building surfaces, and 3) VOAs in building media need not be performed. In addition, asbestos characterization to meet Colorado's Clean Air Act (CAA) standards has already been completed. The results will be incorporated into the final Reconnnaissance Level Characterization Report (RLCR) supplement; no additional asbestos sampling and characterization is needed.

Consistent with recent discussions involving RFETS and regulatory oversight regarding beryllium management, swipe samples for beryllium will be taken if process knowledge and analytical data are insufficient. Lastly, samples for heavy metals will be obtained from the cooling towers, and radiological testing will be performed on all 776 / 777's proposed Type 1 buildings and structures.

The contaminants of concern to Building 776 / 777's proposed Type 1 buildings and their specific sampling frequency(ies) are found in Table 1 (below).

Table 1

Designated Survey Units and Estimated Survey Measurements for Radiological and Non-Radiological Contaminants			
Building	Historic Use	Non-radiological Contaminants of Concern	Number of Measurements Required
701	Research Laboratory (conducted 'cold' lab tests)	Be	Five swipe samples in areas most likely to harbor contamination
702	Pump House (for cooling towers)	Be	Five swipe samples in areas most likely to harbor contamination
703	Pump House (for cooling towers)	Be	Five swipe samples in areas most likely to harbor contamination
710	Steam Reducing Station (reduced steam pressures)	Be	Five swipe samples in areas most likely to harbor contamination

Designated Survey Units and Estimated Survey Measurements for Radiological and Non-Radiological Contaminants			
712A	Propane Valve House (propane pressure reducing valve)	Be	Five swipe samples in areas most likely to harbor contamination
712	Cooling Tower (uses potable, non – contact grade water to cool 776/777 by evaporation)	As, Ba, Cd, Cr, Hg, Pb, Se, Ag	One five point composite of sediments
			Five discrete samples of cooling tower woods
		As, Ba, Cd, Cr, Hg, Pb, Se, Ag, Storm-water Parameters	One grab sample from cooling tower waters
713	Cooling Tower (uses potable non – contact grade water to cool 776/777 by evaporation)	As, Ba, Cd, Cr, Hg, Pb, Se, Ag	One five point composite of sediments
			Five discrete samples of cooling tower woods
		As, Ba, Cd, Cr, Hg, Pb, Se, Ag, Storm-water Parameters	One grab sample from cooling tower waters
713A	Valve Pit (serviced cooling towers)	Be	Five swipe samples in areas most likely to harbor contamination
781	Helium Pump House (stored gases)	Be	Five swipe samples in areas most likely to harbor contamination

Radiological (U, Pu, Am) Characterization			
Survey Unit	Building	Historic Use	Estimated Number of Measurements Required
776001	701	Research Laboratory	15 interior+15 exterior 10% scan of accessible surfaces
776002	702	Pump house	15 interior+15 exterior 10% scan of accessible surfaces
	710	Steam Reducing Station	
	712A	Propane Valve House	
776003	712	Cooling Tower	15 accessible+15 post demo 10% scan of accessible surfaces before demo
			Total U, Pu, and Am on sediments and waters
776004	713	Cooling Tower	15 accessible+15 post demo 10% scan of accessible surfaces before demo
			Total U, Pu, and Am on sediments and waters

Designated Survey Units and Estimated Survey Measurements for Radiological and Non-Radiological Contaminants			
776005	703	Pump house	15 interior+15 exterior 10% scan of accessible surfaces
	713A	Valve Pit	
	781	Helium Pump House	

Table 1 Notes

1) Based on the RLCR, no further RCRA/chemical sampling is required to completely characterize B701, B702, B703, B710, B712A, B713A, and B781. All waste chemicals and product will be removed from these structures before D&D operations commence.
2) Beryllium swipes and radiological samples will be obtained from building roofs, exterior walls, and at biased locations.
3) Per site protocols, field QC samples will be taken in addition to Table 1's schedule.
4) Asphalt surfaces, soil and utilities not physically part of the 776 structures are not within the scope of this package.
5) The concrete basins underlying the cooling towers will be typed for RCRA classification based on analytical results of waters and sediments contained within the berms (available analytical data establish that waters meet drinking water standards and that the sediments are non – hazardous solid wastes).
6) As, Ba, Cd, Cr, Hg, Pb, Se, Ag, and Be stand for arsenic, barium, cadmium, chromium, mercury, lead, selenium, silver, and beryllium.

Table 1 was generated using the DQO approach, as required by the Pre – Demolition Survey Plan (PDSP). One exception to the PDSP requirements of Section 3.1.2.4 (Surface Activity Measurements) is that random TSA measurements cannot be conducted on elevated surfaces due to the safety constraints associated with the Towers. Importantly, Post – Demolition Surveys will be conducted on the demolition debris as specified in Table 1.

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Attachment B

Survey Results

Radiological (Source: Cooling Tower PDSR)
Be (Source: RFETS' ASD Database)

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00625RF01

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2001 SEP 21 A 9:18
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Department of Energy
ROCKY FLATS FIELD OFFICE
10808 HIGHWAY 93, UNIT A
GOLDEN, COLORADO 80403-8200

SEP 18 2001

01-DOE-01741

DIST.	LTR	ENC
BOGENBERGER, V.		
BOGNAR, E.	X	
BRAILSFORD, M.D		
BURNS, T. F.		
DECK, C. A.		
DIETERLE, S. E.		
FERRERA, D.W.		
FERRI, M.S.	X	X
GERMAIN, A. L.		
GIACOMINI, J.		
HALL, L.		
ISOM, J. H.		
MARTINEZ, L.A.	X	
NORTH, K.		
PARKER, A.M.		
POWERS, K.	X	
RAAZ, R. D.		
RODGERS, A. D.		
SANDLIN, N. B.		
SCOTT, G.K.		
SHELTON, D.C.		
SPEARS, M.S.		
TRICE, K.D.		
TUOR, N.R.	X	
VOORHEIS, G.M.		
WILLIAMS, J. L.		
Hopkins, T.	X	X
Crocker, M.	X	
Sprokes, W.	X	

COR. CONTROL	X	X
ADMN. RECORD	X	X
PATS/130		

Reviewed for Addressee
Corres. Control RFP

9/21/01 lcg
Date By

Ref. Ltr. #

DOE ORDER #
474.1

Mr. Steven H. Gunderson
Rocky Flats Cleanup Agreement Coordinator
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80222-1530

Dear Mr. Gunderson:

This correspondence forwards the Building 776/777 Cooling Tower Decommissioning Pre-Demolition Survey Report, which is attached for your review. The report confirms the Type 1 characterization classification of the structures included in the Cooling Towers and satellite buildings.

Kaiser-Hill Company, L.L.C. is prepared to begin decommissioning of these structures immediately and we recognize that the Decommission Program Plan suggests a 10-day review period be provided for this document. However, since the development of this report included review and input from your staff, we request your concurrence to begin the decommissioning in advance of the 10-day review period.

Please feel free to contact Gary Schuetz, Rocky Flats Field Office, at (303) 966-3016 with any questions.

Sincerely,

Joseph A. Legare
Assistant Manager
for Environment and Stewardship

Enclosure

cc:
G. Schuetz, FCWM, RFFO
M. Ferri, K-H
T. Hopkins, K-H
T. Rehder, EPA Region VIII
Building 850 Administrative Record

17

Survey Unit 776002 Buildings 702/710/712A Total Surface Contamination Results

Total Surface Activity Survey

Meter Model:	NE Electra w/ DP6 Probe			Local Area Bkgd (cpm)
Instrument #:	4066	1264	2400	4.5
Cal. Due Date:	10/24/01	12/4/01	9/15/01	
Efficiency (c/d):	0.227	0.224	0.221	

Quality Control Survey

NE Electra w/ DP6 Probe			Local Area Bkgd (cpm)
4060	N/A	N/A	3.7
11/17/01	N/A	N/A	
0.220	N/A	N/A	

Total Surface Activity Measurements

Sample Location Number	Instrument #	Date	(cpm)	MDA (dpm/100 cm²)	(dpm/100 cm²)
1	4066	06/07/01	3.3	43	-5.2
2	4066	06/07/01	8.0	43	15.5
3	4066	06/07/01	4.7	43	0.9
4	4066	06/07/01	2.1	43	-10.5
5	4066	06/07/01	3.3	43	-5.2
6	4066	06/07/01	10.7	43	27.4
7	4066	06/07/01	9.3	43	21.2
8	4066	06/07/01	6.0	43	6.7
9	2400	06/12/01	Note 1	43	Note 1
10	1264	06/10/01	6.7	43	9.8
11	2400	06/12/01	15.0	43	46.3
12	1264	06/10/01	2.7	43	-7.9
13	1264	06/10/01	14.7	43	45.0
14	1264	06/10/01	14.0	43	41.9
15	1264	06/10/01	21.3	43	74.1
				MIN	-10.5
				MAX	74.1
				MEAN	18.6
				SD	25.4
				Transuranic $DCGL_W$	100

Quality Control Measurements

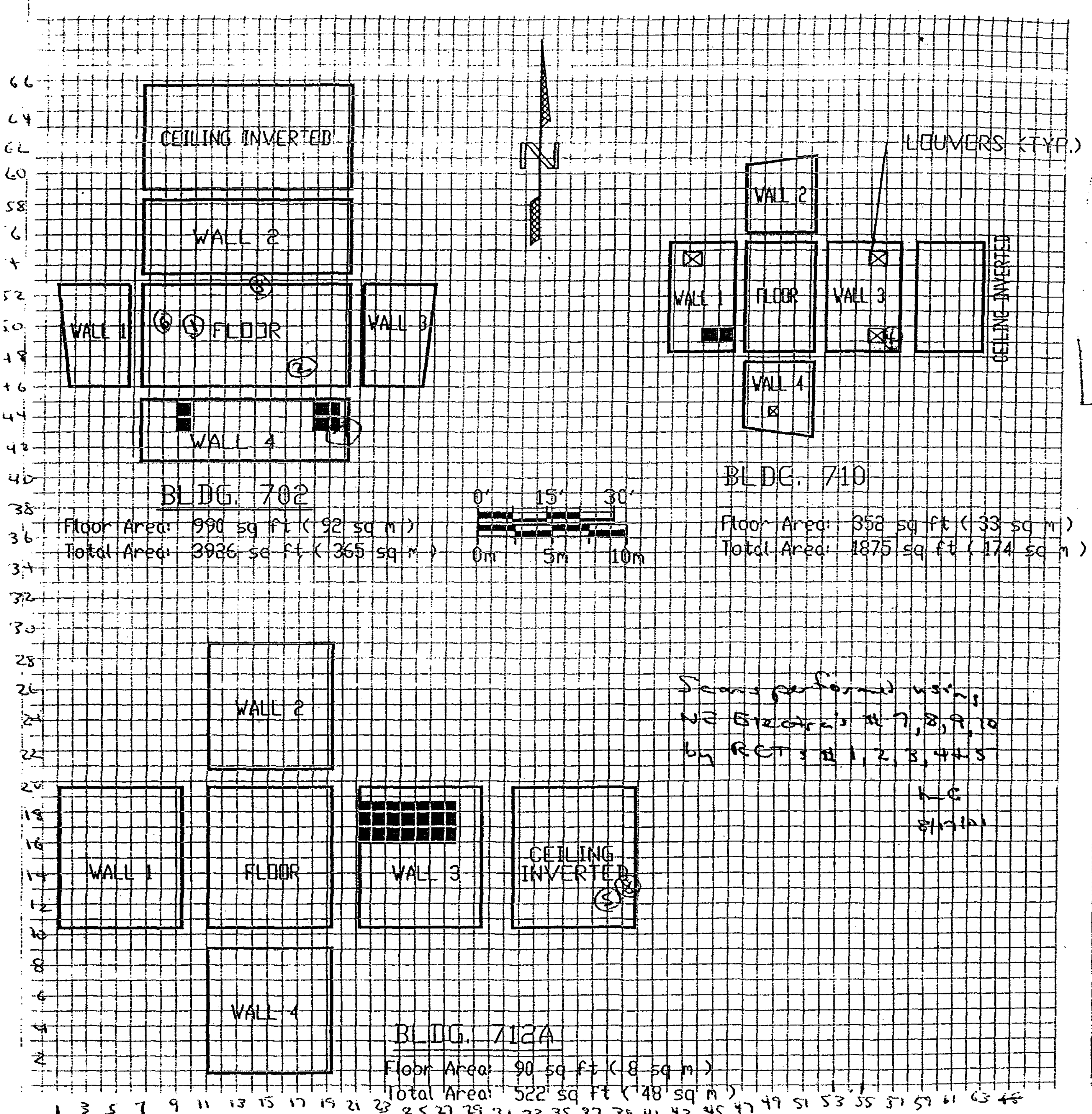
Instrument #	Date	(cpm)	MDA (dpm/100 cm²)	(dpm/100 cm²)
4060	06/12/01	13.3	41	43.6
4060	06/12/01	17.3	41	61.8

Note 1 - An investigation was performed, and fifteen additional readings were obtained. The data was plotted in accordance with TBD-00156 and the elevated activity was verified to be attributable to Po-210.

RADIOLOGICAL CLOSEOUT SURVEY FOR THE 776 CLUSTER

Survey Area: A   Survey Unit: 776002   Classification: 2
Building: 702, 710 & 712A INTERIOR
Survey Unit Description: B702, 710 & 712A Interior   Grid Size: na
Total Floor Area: 1432 sq ft (133 sq m)   Total Area: 6323 sq ft (587 sq m)

SURVEY UNIT 776002 - MAP 1 OF 2



0' 5' 10'
0m 1.5m 3m

AREA SCANNED ▢

Date: 6/12/01
Page: 14 of 17

Page 1 of 4

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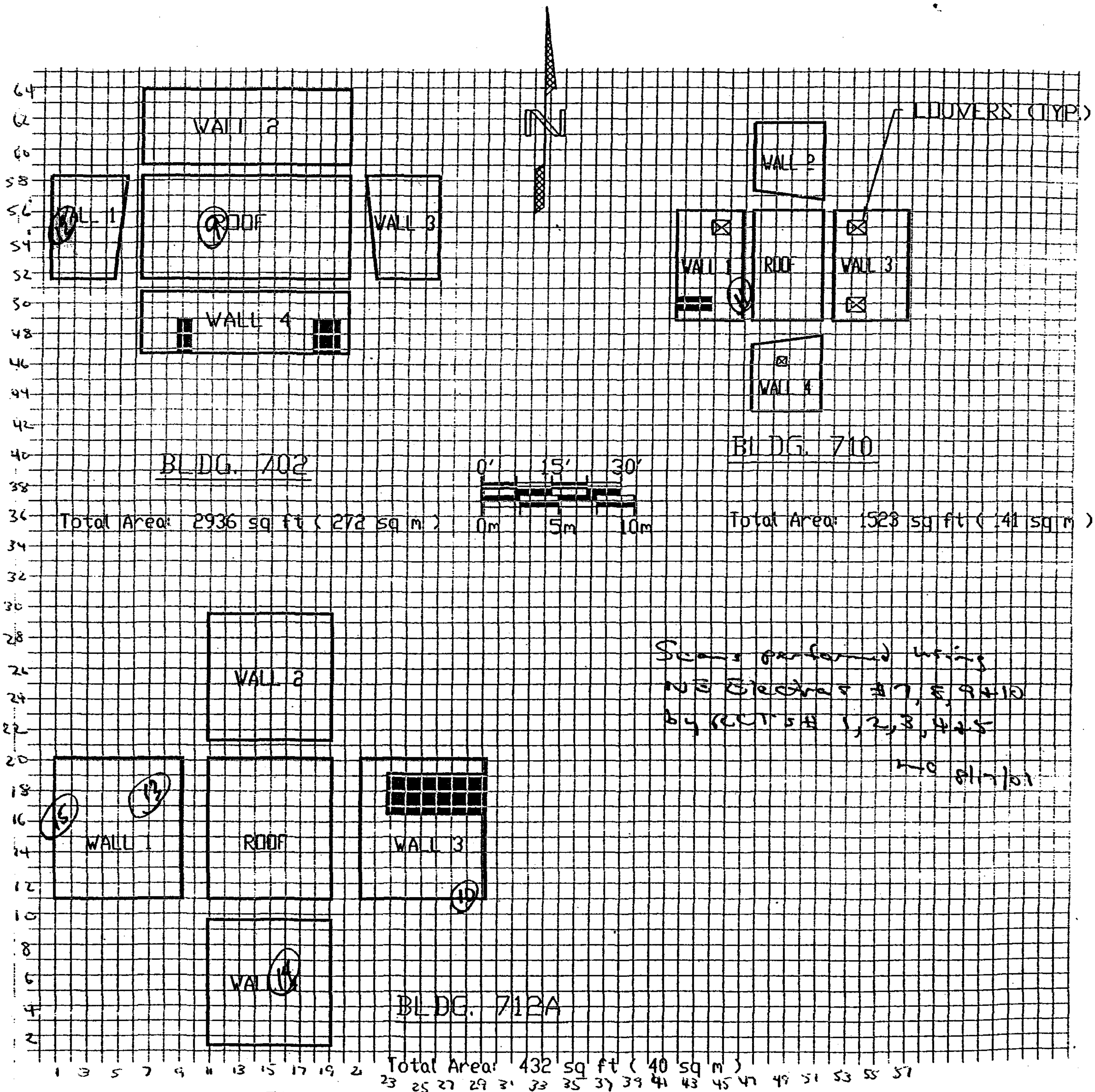
RADIOLOGICAL C JSEOUT SURVEY FOR T : 776 CLUSTER

Survey Area: A　　Survey Unit: 776002　　Classification: 2
Building: 702, 710 & 712A EXTERIOR
Survey Unit Description: B702, 710 & 712A Exterior　　Grid Size: na
Total Area: 4891sq ft (454 sq m)

SURVEY UNIT 776002 - MAP 2 OF 2



0' 5' 10'
0m 1.5m 3m

AREA SCANNED ▢

Date: 6/12/01
Page: 15 of 17

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Industrial Hygiene Information System
Surface Sample Report

IHISR_SURFACE_SAMPLE

Date: 06/12/2003

RIN: 03C0366

Sample Number/Type: 710-06102003-31-101 WIPE **Hygienist:** DAVID FARLER
Location Info: FINAL BERYLLIUM SURVEY
Room No: INSIDE
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 710-06102003-31-102 WIPE **Hygienist:** DAVID FARLER
Location Info: FINAL BERYLLIUM SURVEY
Room No: INSIDE
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 710-06102003-31-103 WIPE **Hygienist:** DAVID FARLER
Location Info: FINAL BERYLLIUM SURVEY
Room No: INSIDE
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 710-06102003-31-104 WIPE **Hygienist:** DAVID FARLER
Location Info: FINAL BERYLLIUM SURVEY
Room No: INSIDE
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 710-06102003-31-105 WIPE **Hygienist:** DAVID FARLER
Location Info: FINAL BERYLLIUM SURVEY
Room No: INSIDE
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 710-06102003-31-106 WIPE **Hygienist:** DAVID FARLER
Location Info: FINAL BERYLLIUM SURVEY
Room No: INSIDE
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 710-06102003-31-107 WIPE **Hygienist:** DAVID FARLER
Location Info: FINAL BERYLLIUM SURVEY
Room No: INSIDE
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 710-06102003-31-108 WIPE **Hygienist:** DAVID FARLER
Location Info: FINAL BERYLLIUM SURVEY
Room No: INSIDE
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 710-06102003-31-109 WIPE **Hygienist:** DAVID FARLER
Location Info: FINAL BERYLLIUM SURVEY
Room No: INSIDE
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 710-06102003-31-110 BLANK **Hygienist:** DAVID FARLER
Location Info:
Room No:
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG

DOES NOT CONTAIN
OFFICIAL USE ONLY INFORMATION
Name/Org [signature] /PRC Date 11/5/08
Directed by: J.A. Nesheim DOE M471.3-1

[redacted] 2.

21

Survey Unit 776005 Buildings 703/713A/781 Total Surface Contamination Results

Total Surface Activity Survey						Quality Control Survey				
Meter Model:	NE Electra w/ DP6 Probe				Local Area Bkgd (cpm)	NE Electra w/ DP6 Probe			Local Area Bkgd (cpm)	
Instrument #:	1418	4064	3172	1264	7.3	4060	N/A	N/A	3.7	
Cal. Due Date:	11/15/01	9/13/01	7/26/01	12/4/01		11/17/01	N/A	N/A		
Efficiency (c/d):	0.208	0.221	0.213	0.224		0.220	N/A	N/A		
	Total Surface Activity Measurements					Quality Control Measurements				
Sample Location Number	Instrument #	Date	(cpm)	MDA (dpm/100 cm²)	(dpm/100 cm²)	Instrument #	Date	(cpm)	MDA (dpm/100 cm²)	(dpm/100 cm²)
1	1418	06/05/01	10.7	58	16.5					
2	1418	06/05/01	10.7	58	16.5					
3	1418	06/05/01	8.7	58	16.5					
4	1418	06/05/01	9.3	58	6.9					
5	1418	06/05/01	11.3	58	9.7					
6	1418	06/05/01	10.7	58	19.4					
7	1264	06/10/01	4.7	58	16.5					
8	1264	06/10/01	3.3	58	-12.4					
9	4060	06/13/01	Note 1	Note 1	Note 1					
10	4064	06/06/01	29.5 Note 2	Note 2	Note 2					
11	1418	06/05/01	25.3	58	86.7	4060	06/12/01	13.3	41	43.9
12	1418	06/05/01	12.3	58	24.2					
13	3172	06/06/01	12.7	58	26.1	4060	06/12/01	9.2	41	25.2
14	1418	06/05/01	14.0	58	32.3					
15	4060	06/13/01	13.3	58	29.0					
				MIN	-12.4					
				MAX	86.7					
				MEAN	22.1					
				SD	22.5					
				Transuranic $DCGL_W$	100					

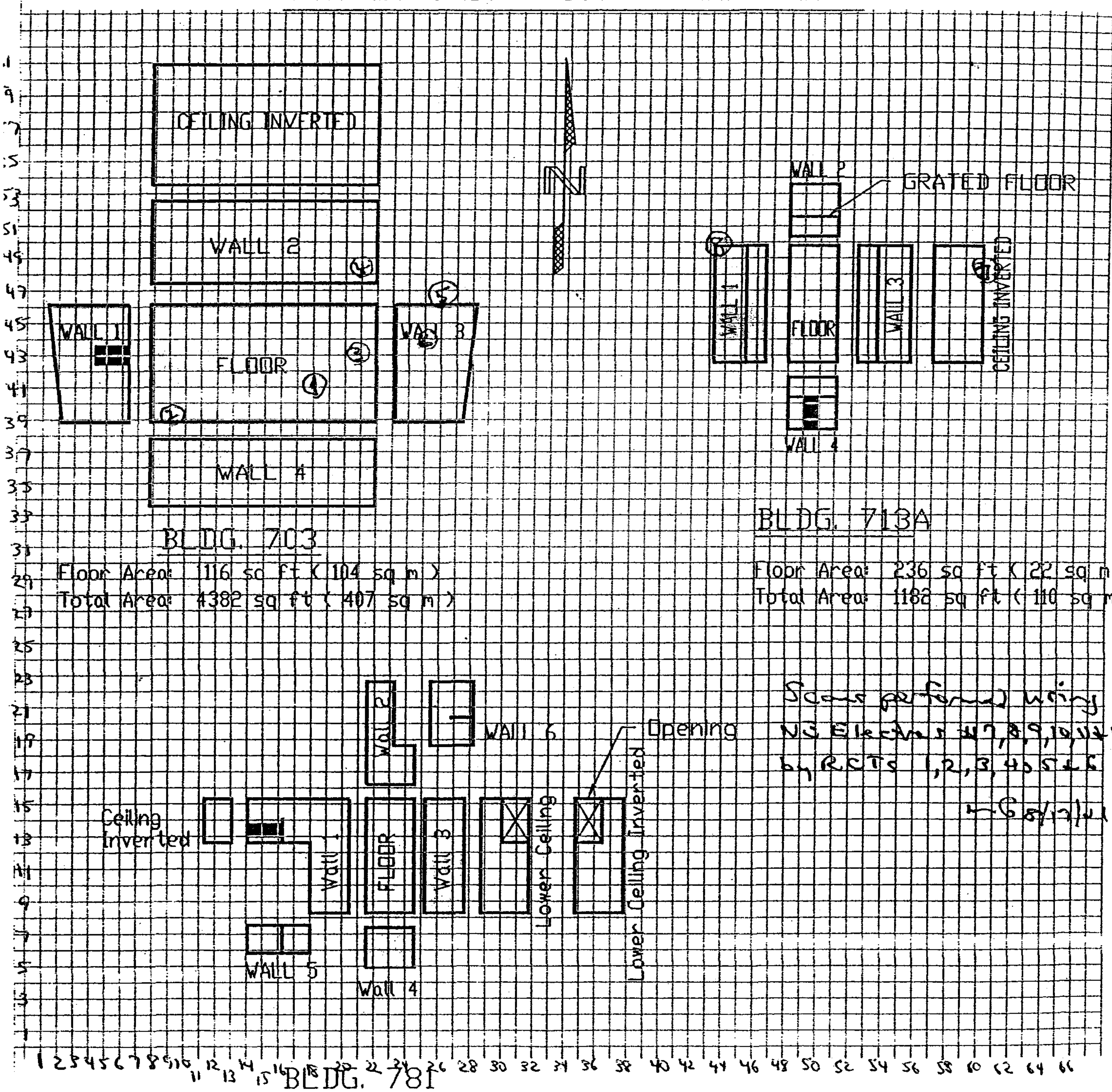
Note 1 - An elevated reading of 60.1 cpm was present at this survey measurement location. An investigation was performed, and a coupon sample was obtained. The activity was verified by alpha spec. analysis to be Po-210 vs. transuranic activity.

Note 2 - An investigation was performed, and eight additional readings were obtained to verify the 1m² average was less than 100 dpm/100 cm². The average value of the nine measurements was 29.5 cpm and 106.9 dpm/100 cm². A media sample was obtained at this location and an isotopic analysis was performed. The total transuranic alpha activity was 21.5 dpm/100 cm² and the total uranium activity was 458.9 dpm/100 cm².

RADIOLOGICAL C JSEOUT SURVEY FOR T - 776 CLUSTER

Survey Area: A Survey Unit: 776005 Classification: 2
Building: 703, 713A & 781 INTERIOR
Survey Unit Description: B703, 713A & 781 Interior Grid Size: na
Total Floor Area: 1582 sq ft (147 sq m) Total Area: 7107 sq ft (660 sq m)

SURVEY UNIT 776005 - MAP 1 OF 2



BLDG. 781

Floor Area: 230 sq ft (21 sq m)
Total Area: 1543 sq ft (143 sq m)

AREA SCANNED ☐

0' 15' 30'
0m 5m 10m

Page 3 of 4

Date: 6/10/01
Page: 25 of 28

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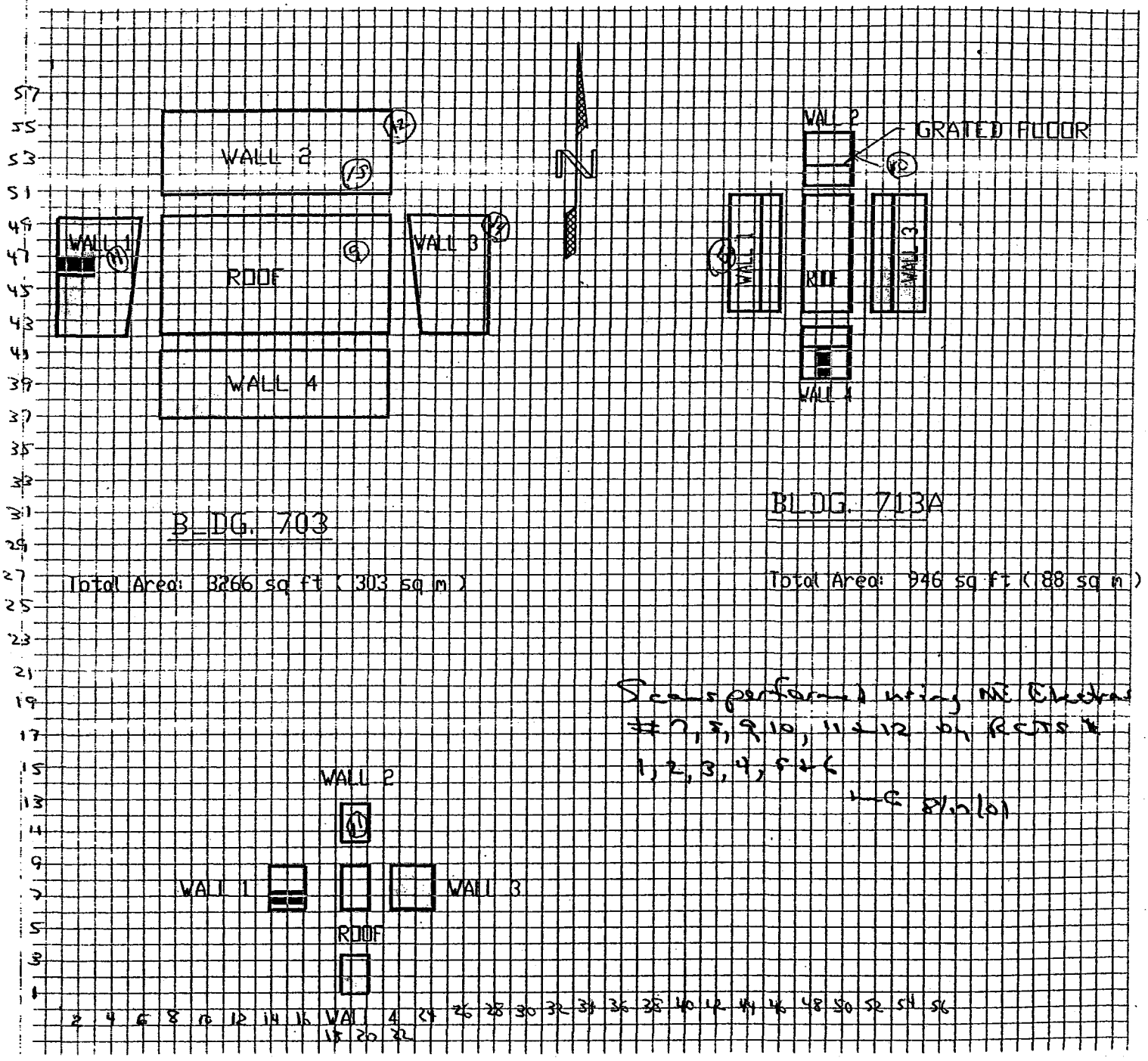
RADIOLOGICAL CLOSEOUT SURVEY FOR E 776 CLUSTER

Survey Area: A Survey Unit: 776005 Classification: 2
Building: 703, 713A & 781 EXTERIOR
Survey Unit Description: B703, 713A & 781 Exterior Grid Size: na
Total Area: 4478 sq ft (416 sq m)

SURVEY UNIT 776005 - MAP 2 OF 2



BLDG. 781

Total Area: 266 sq ft (25 sq m)

AREA SCANNED ☐

0' 15' 30'
0m 5m 10m

Page 4 of 4

Date: 6/10/01
Page: 26 of 28

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IHISR_SAMPLE_RESULTS_REPORT

Date: 06/16/2003

Industrial Hygiene Information System
Sample Results Report

SURFACE

Sample Number	Work Pkg	Room	Location	Type	Rin No	Analyte	Concentration
RMRS							
781-10152002-31-151	SURVEY	INSIDE	NE QUAD FLOOR	WIPE	03C0018	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
781-10152002-31-152	SURVEY	INSIDE	NW QUAD FLOOR	WIPE	03C0018	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
781-10152002-31-153	SURVEY	INSIDE	SE QUAD FLOOR	WIPE	03C0018	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
781-10152002-31-154	SURVEY	INSIDE	SW QUAD FLOOR	WIPE	03C0018	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
781-10152002-31-155	SURVEY	INSIDE	CENTER QUAD FLOOR	WIPE	03C0018	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
781-10152002-31-156	SURVEY	INSIDE	641 COIL TOP CENTER OF ROOM	WIPE	03C0018	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
781-10152002-31-157	SURVEY	INSIDE	TOP OF HEATER N END OF ROOM	WIPE	03C0018	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
781-10152002-31-158	SURVEY	INSIDE	TOP OF NORTH I-BEAM CENTER OF ROOM	WIPE	03C0018	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
781-10152002-31-159	SURVEY	INSIDE	VENTILATION CHASE SE CORNER	WIPE	03C0018	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
781-10152002-31-160				BLANK	03C0018	BERYLLIUM AND B	< 0.1000 _ UG

Building Subtotal: 10

Hygienist Subtotal: 10

Company Subtotal: 10

Grand Total 10

Pre demo survey

[redacted]

Attachment C

Original Pre-Demolition Survey Report Transmittal Letter and Excerpts

KAISER•HILL
COMPANY

September 26, 2001 01-RF-02281

Steven H. Gunderson
Rocky Flats Building 707/776/777 Closure Project
Rocky Flats Cleanup Agreement Coordinator
Colorado Department of Public health and Environment
4300 Cherry Creek Drive South
Denver, CO 80222-1530

Gary Schuetz
Facility Closure
DOE, RFFO

PRE-DEMOLITION SURVEY REPORT FOR 776/777 COOLING TOWER DECOMMISSIONING CHARACTERIZATION REPORT – MSF-059-01

Thank you for your participation in the consultative process and prompt review of the Pre-Demolition Survey Report for the pending Building 776/777 cooling tower decommissioning. Attached please find three additions to the characterization report, as requested by Mr. Edd Kray of CDPHE. These additions clarify our conclusions that there are no DOE - added radiological materials to the cooling tower complex.

We will soon be finishing a characterization report for the Building 707 cooling tower that is even more concise.

If you have any questions or concerns, please call Ted Hopkins at 303-966-7652 or Richard Lesser at 303-966-2298.

Sincerely,

Mark Ferri
Vice President and Project Manager
Building 707/776/777 Closure Project
Kaiser-Hill Company, LLC

Enclosures (3)

RL:plh

cc:
Ed Kray - CDPHE

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Rocky Flats Environmental Technology Site

PRE-DEMOLITION SURVEY REPORT (PDSR)

BUILDINGS 702, 703, 712, 712A, 713, 713A
(Building 776/777'S Cooling Towers and Support Buildings)

776/777 CLOSURE PROJECT

REVISION 1

September 7, 2001

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PRE-DEMOLITION SURVEY REPORT (PDSR)

BUILDING 702, 703, 712, 712A, 713, 713A
(Building 776/777'S Cooling Towers and Support Structures)

776/777 CLOSURE PROJECT

REVISION 1

September 7, 2001

Written by: _____ Date: Sept 7, 2001
Richard Lesser, 776/777 Environmental Compliance

Reviewed by: _____ Date: 9/7/01
Gary Chandler, 707/776/777 Radiological Manager

Reviewed by: Ted A Hopkins Date: 9/7/01
Ted Hopkins, 707/776/777 Environmental Compliance Manager

Approved by: Howard Druckman Date: 9/7/01
Howard Druckman, K-H Project Manager

TABLE OF CONTENTS

ATTACHMENTS

ABBREVIATIONS/ACRONYMS

ACM	Asbestos containing material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
$DCGL_{EMC}$	Derived Concentration Guideline Level – elevated measurement comparison
$DCGL_W$	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U.S. Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U.S. Environmental Protection Agency
FDPM	Facility Disposition Program Manual
K-H	Kaiser-Hill
LBP	Lead-based paint
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Minimum detection
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSA	Removable surface activity
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TBD	Technical Basis Document
TSA	Total surface activity
VOCs	Volatile organic compounds
V&V	Verification and validation

EXECUTIVE SUMMARY

A Pre-Demolition Survey (PDS) was performed to enable compliant disposition and waste management of Buildings 702, 703, 712, 712A, 713, and 713A (Building 776/777's Cooling Towers and satellite buildings). The PDS encompassed radiological characterization pursuant to the D&D Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). The characterization built upon physical, chemical and radiological hazards identified in the *Building 776 / 777 Reconnaissance Level Characterization Report,* August 28, 1998.

Results indicate that no radiological contamination exists in excess of the prescribed release limits of DOE Order 5400.5. Asbestos containing insulation exists on piping associated with the cooling tower pumps, and will be removed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. Facility surfaces may contain paints with PCBs and metals. All demolition debris will be managed in compliance with regulations governing potential PCB bulk product wastes (40 CFR 761), and RFETS Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal* as applicable.

To ensure that the facility remains free of contamination and that PDS data remain valid, isolation controls will be established and posted accordingly. Demolition shall not occur until the PDS Report is submitted to and approved by the Colorado Department of Public Health and Environment (CDPHE).

Additional post-demolition radiological surveys must be performed on the upper reaches of Buildings 712 and 713 prior to their free release; safety considerations precluded access during this PDS. Process knowledge strongly indicates that these surveys will allow free release of materials for off-site disposal.

All buildings surveyed may be classified as Type I buildings under the Rocky Flats Cleanup Agreement (RFCA).

RADIOLOGICAL DATA SUMMARY

In accordance with the Pre-Demolition Survey Package (PDSP) titled "Radiological and Non-Radiological Characterization Package for Building 776/777's Satellite Buildings", total surface activity (TSA) and removable surface activity (RSA) surveys, and scan surveys were performed in each survey unit. The number/frequency of surveys/samples collected in each area was based on guidance provided in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) and PRO-475-RSP-16.01, Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure. All of the affected survey units meet the unrestricted release criteria in DOE Order 5400.5. Refer to the radiological data summaries in Attachment C for results.

Survey Unit Descriptions

The 776/777 satellite buildings were divided into five survey units based on similar contamination potential. A brief description and survey status of each of the five survey units is described below:

Survey Unit	Description	Status
776001	Bldg 701	Not surveyed (Not part of this PDSP)
776002	Bldgs. 702/710/712A	Surveyed – All results < than applicable DCGLs
776003	712 (Cooling Tower)	Unsafe to perform MARSSIM survey (Survey will be performed after demolition)
776004	713 (Cooling Tower)	Unsafe to perform MARSSIM survey (Survey will be performed after demolition)
776005	Bldgs. 703/713A/781	Surveyed – All results < than applicable DCGLs

Survey Units

776001

As stated in the table above, building 701 is not part of this PDSR and will be surveyed at a later date.

776002

Fifteen (15) TSA measurements, Fifteen (15) RSA measurements and 10% scan surveys were performed on these structures. For convenience and because of similar contamination potential, this survey unit included Bldg. 710. This building is not part of this PDSR. A future PDSR will address Bldg 710's survey status prior to D&D. One TSA measurement location required investigation because of elevated readings. Fifteen additional TSA measurements were obtained at survey measurement location #9 on the galvanized steel roof of Bldg. 703. The data were evaluated in accordance with a technical basis document (TBD 00156, Rev. 0), to distinguish between background (Po-210) and DOE-added material. The elevated reading at survey measurement location #9 for Bldg. 702 was attributed to Po-210. In addition to the TBD measurements, as requested by the CDPHE, a coupon sample was obtained at location #9 on the roof of B702. The data was analyzed by alpha spec., and the activity was confirmed to be Po-210, and not transuranic activity, and no further investigation is required.

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776003 & 776004

As stated in the table above, because of the dilapidated condition of the cooling towers, it was considered unsafe to perform MARSSIM surveys. Surveys will be performed on each of the cooling towers after demolition, and prior to the release of material off-site.

776005

Fifteen (15) TSA measurements, fifteen (15) RSA measurements and 10% scan surveys were performed on these structures. For convenience and because of similar contamination potential, this survey unit included Bldg. 781. This building is not part of this PDSR. A future PDSR will address Bldg 781's survey status prior to D&D. Two TSA measurement locations required investigation because of elevated readings. As stated under 776002, an investigation was performed at survey measurement location #9 in this survey unit. Fifteen additional TSA activity measurements were obtained at survey measurement location #9 on the galvanized steel roof of Bldg. 703. The data was evaluated in accordance with a technical basis document (TBD 00156, Rev. 0), to distinguish between background (Po-210) and DOE-added material. The elevated reading on the galvanized steel roof at measurement location #9 was attributed to Po-210. In addition to the TBD measurements, as requested by the CDPHE, a coupon sample was obtained at location #9 on the roof of B703. The data was analyzed by alpha spec., and the activity was confirmed to be Po-210, and not transuranic activity and no additional investigations are required. Eight additional total surface activity measurements were obtained at survey location 10 on the concrete surface of the north wall of Bldg. 713A. The average TSA value for one m^2 surrounding this survey location exceeded 100 dpm/100 cm^2. Therefore, a media sample was obtained at this location. The media sample result was 22.5 dpm/100 cm^2 total transuranic alpha, and 458.9 dpm/100 cm^2 total uranium. Based on the fact that the total transuranic alpha result was < 100 dpm/100 cm^2 (the DCGLw for transuranic alpha) , and the total uranium alpha result was < 5000 dpm/100 cm^2 (the DCGLw for uranium alpha) no further investigation was required.

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Survey Unit 776005 Data Summary

Total Surface Activity Measurements

	15	15	
	Number Required	Number Obtained	
MIN	-12.4		dpm/100 cm^2
MAX (Note)	86.7		dpm/100 cm^2
MEAN	22.1		dpm/100 cm^2
STD DEV	22.5		dpm/100 cm^2
TRANSURANIC DCGL$_W$	100		dpm/100 cm^2

Note: These statistics do not include the elevated reading of 60.7 cpm detailed in note 1 for TSA results on the following page.

Removable Activity Measurements

	15	15	
	Number Required	Number Obtained	
MIN	-1.5		dpm/100 cm^2
MAX	11.5		dpm/100 cm^2
MEAN	3.1		dpm/100 cm^2
STD DEV	4.0		dpm/100 cm^2
TRANSURANIC DCGL$_W$	20		dpm/100 cm^2

Media Sample Activity

Media Samples	1 (Note)	1 (Note)
	Number Required	Number Obtained

Total Uranium Results

MIN	458.9	dpm/100 cm^2
MAX	458.9	dpm/100 cm^2
MEAN	458.9	dpm/100 cm^2
DCGL$_W$	5000	dpm/100 cm^2

Total Transuranic Results

MIN	21.5	dpm/100 cm^2
MAX	21.5	dpm/100 cm^2
MEAN	21.5	dpm/100 cm^2
DCGL$_W$	100	dpm/100 cm^2

Note: One media sample was taken to investigate an elevated reading on the north wall on the exterior of B713A

Survey Unit 776002 Buildings 702/710/712A Data Summary

Total Surface Activity Measurements

	15	15	
	Number Required	Number Obtained	
MIN	-10.5		dpm/100 cm^2
MAX	74.1		dpm/100 cm^2
MEAN	18.6		dpm/100 cm^2
STD DEV	25.4		dpm/100 cm^2
TRANSURANIC DCGL$_W$	100		dpm/100 cm^2

Note: These statistics do not include the elevated reading of 57.3 cpm detailed in note 1 for TSA results on the following page.

Removable Activity Measurements

	15	15	
	Number Required	Number Obtained	
MIN	-1.5		dpm/100 cm^2
MAX	13.6		dpm/100 cm^2
MEAN	2.3		dpm/100 cm^2
STD DEV	4.4		dpm/100 cm^2
TRANSURANIC DCGL$_W$	20		dpm/100 cm^2

Attachment D

Supplements to Pre-Demolition Survey Report Transmittal Letter and Coupon Sample Result

Revision 7/01

CORRES. CONTROL
OUTGOING LTR NO.

DOE ORDER #

01 -RF-02178

DIST.	LTR	ENC
BRAILSFORD, M.D		
FERRERA, D.W.		
FERRI, M.S.	X	
FULTON, J.C.		
GIACOMINI, J.		
HALL, L.		
MARTINEZ, L.A.		
PARKER, A.M.		
POWERS, K.		
SCOTT, G.K.		
SHELTON, D.C.		
SPEARS, M.S.		
TRICE, K.D.		
TUOR, N.R.		
VOORHEIS, G.M.		
Chandler, G	X	
Dahlgren, S	X	
Druckman, H	X	
Hopkins, T	X	
Johnson, M	X	
Lesser, R	X	
McGinn, D	X	
Starkey, R	X	
COR. CONTROL	X	X
ADMN. RECORD	X	X
WASTE REC. CTR		
TRAFFIC		
DATS/130		
CLASSIFICATION:		
UNI		
UNCLASSIFIED	X	X
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER
SIGNATURE

Date 9/17/01

REPLY TO RFP CC
TO:

ACTION ITEM STATUS

PARTIAL/OPEN

CLOSED

LTR APPROVALS:

ORIG & TYPIST INITIALS
RL:cms

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KAISER•HILL
COMPANY

September 17, 2001

01-RF-02178

Gary Schuetz
Facility Closure
DOE, RFFO

SUPPLEMENTS TO PRE-DEMOLITION SURVEY REPORT FOR 776/777 COOLING TOWER DECOMMISSIONING – MSF-052-01

I appreciate your prompt review and approval of our cooling tower's Pre Demolition Survey Report. Attached please find the additional laboratory data needed to demonstrate that only naturally occurring radioisotopes are present in the infrastructure.

The 707/776/777 staff shares DOE's concerns that we must carefully distinguish between natural radioactivity and DOE - added radionuclides in wastes bound for local disposal. The general public need be confident that these determinations incorporate all necessary due diligence.

Please contact Ted Hopkins at 303-966-7652 or Richard Lesser at 303-966-2298 if you have any questions.

Mark S. Ferri

Mark S. Ferri
Vice President & Project Manager
Building 707/776/777 Closure Project
Kaiser-Hill Company, LLC

RL:cms

Attachment:
As stated

Kaiser Hill Company, L.L.C.
Rocky Flats Environmental Technology Site, 10808 Hwy. 93 Unit B, Golden CO 80403-8200 ♦ 303-966-7000

KAISER•HILL
COMPANY

01 SEP 17 PM 3:12
RECEIVED

September 17, 2001

01-RF-02178

Gary Schuetz
Facility Closure
DOE, RFFO

SUPPLEMENTS TO PRE-DEMOLITION SURVEY REPORT FOR 776/777 COOLING TOWER DECOMMISSIONING – MSF-052-01

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Please contact Ted Hopkins at 303-966-7652 or Richard Lesser at 303-966-2298 if you have any questions.

Mark S. Ferri

Mark S. Ferri
Vice President & Project Manager
Building 707/776/777 Closure Project
Kaiser-Hill Company, LLC

RL:cms

Attachment:
As stated

Kaiser Hill Company, L.L.C.
Rocky Flats Environmental Technology Site, 10808 Hwy. 93 Unit B, Golden CO 80403-8200 ♦ 303-966-7000

40

Sample ID: **082101 sample#9 bld 703** **Type:** **Unknown**

Batch ID: unknowns
Acquisition Start: August 21, 2001 17:14:46
Analysis Date: August 22, 2001 06:27:24
Procedure: Po210 count
Device: Oasis:01:02
Analysis Method: ROI Analysis
Spectrum File: 00007211.OXS LiveTime: 43,200.00

Calibrations:
Energy = -1.083E+01 +2.813E+00 * Chn Coeff. of Correlation: -0.998
Calibration Date: July 28, 2001 08:38:33 Std: TS4189
Shape not Calibrated.
Efficiency = 3.133E-01 ± 4.187E-03
Calibration Date: July 30, 2001 07:11:59 Std: TS4189b

External Recovery No Ext.Recovery

Original Sample Amount:
1.000 ± 0.000 samp
Aliquot Amount: 1.000 ± 0.000 samp

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 ROI # 2	Po218	5556.4	6103.7	6067.9	3.3
2 ROI # 3	Po214	6589.7	7877.5	7232.4	2.8
3 ROI # 4	Po212	8394.4	8749.3	8571.4	2.8
4 ROI # 4	Po210	2521.2	5333.5	5072.1	14.6

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
ROI # 2	54.4 ± 7.6	2.60	0.076 ± 0.011	Unknown
ROI # 3	24.6 ± 5.1	1.40	0.034 ± 7.12E-03	Unknown
ROI # 4	21.0 ± 4.6	0.00	0.029 ± 6.36E-03	Unknown
ROI # 4	6,342.0 ± 79.8	17.00	8.808 ± 0.111	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM. PROB	ACTIVITY (dpm/samp)	MDA (dpm)
ROI # 2	Po218	1.000	0.241 ± 0.034	3.78E-02
ROI # 3	Po214	1.000	0.109 ± 0.023	3.09E-02
ROI # 4	Po212	1.000	0.093 ± 0.020	1.20E-02
ROI # 4	Po210	1.000	28.111 ± 0.516	7.79E-02

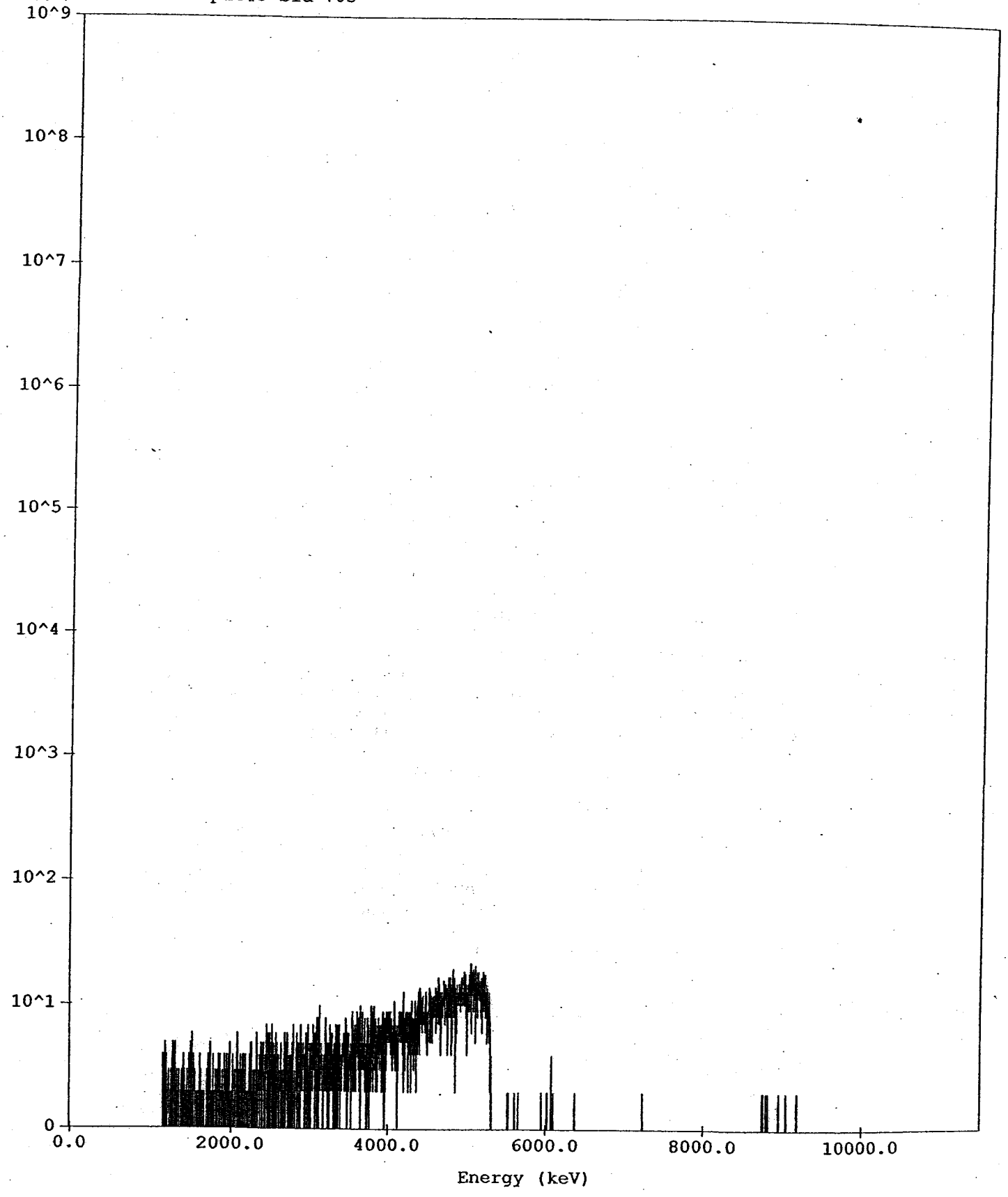
Activity reported as of August 21, 2001 17:14:46

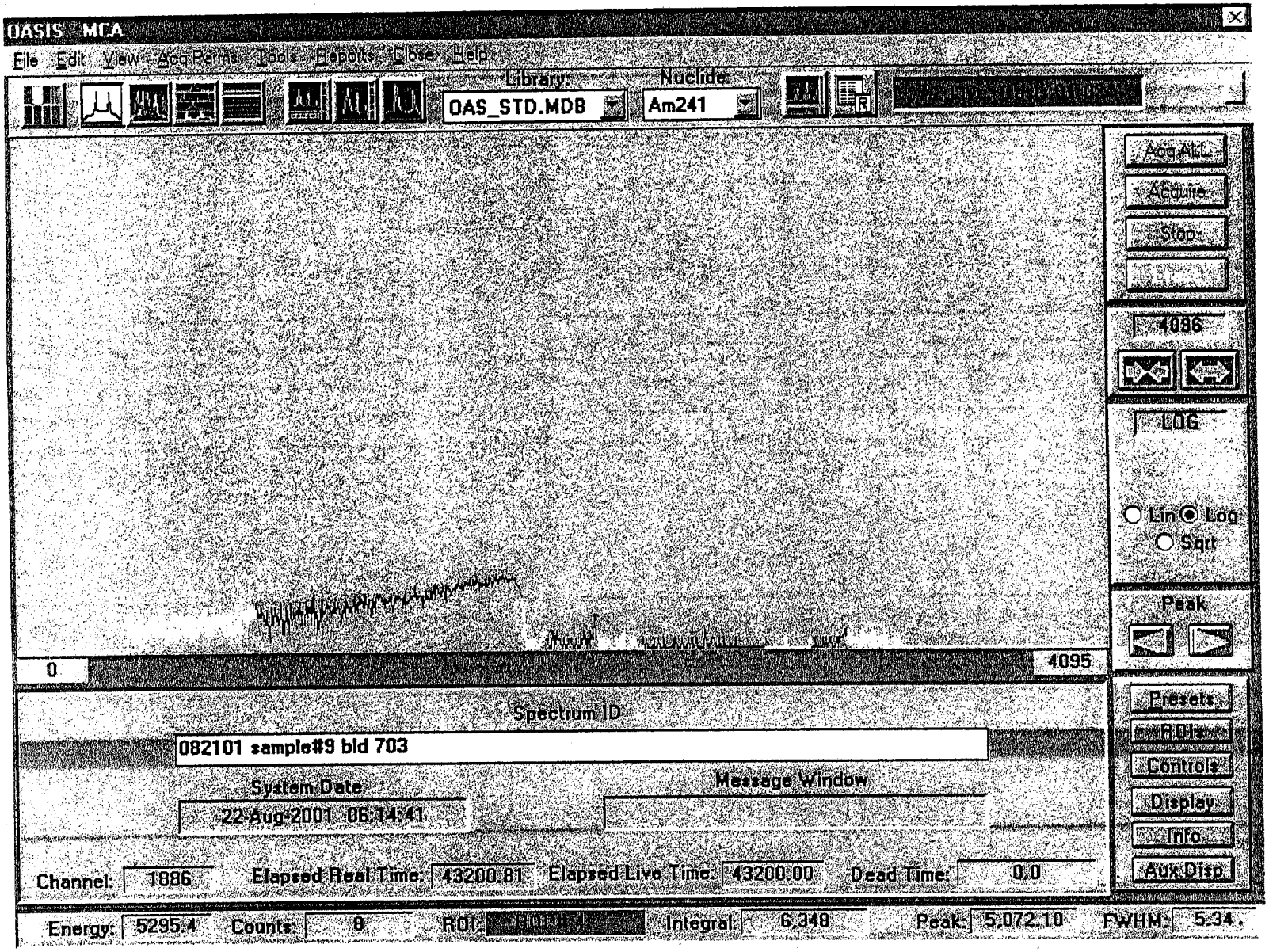
ANALYSIS REVIEWED BY: G A HAAS 515855 Gary A Haas

APPROVED BY: C J BIANCONI 520358 CJB 8.22.01

DOE-added nuclides not indicated CJB 8.22.01

File(2): 00007211.OXS Date: 21-Aug-2001 17:14:46 LT: 43,200.00 RT: 43,200.81
ID(2): 082101 sample#9 bld 703




OASIS MCA
File Edit View Acq Parms Tools Reports Close Help
Library:
OAS_STD.MDB
Nuclide:
Am241
Acq ALL
Acquire
Stop
4086
LOG
Lin Log
Sqrt
Peak
0
4095
Spectrum ID
082101 sample#9 bld 703
System Date
22-Aug-2001 06:14:41
Message Window
Presets
ROIs
Controls
Display
Info
Aux Disp
Channel: 1886
Elapsed Real Time: 43200.81
Elapsed Live Time: 43200.00
Dead Time: 0.0
Energy: 5295.4
Counts: 8
ROI:
Integral: 6,348
Peak: 5,072.10
FWHM: 5.34

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Sample ID: 082101 sample#9 bld 702 **Type:** Unknown

Batch ID: unknowns
Acquisition Start: August 21, 2001 17:14:45
Analysis Date: August 22, 2001 06:29:09
Procedure: Po210 count
Device: Oasis:01:01
Analysis Method: ROI Analysis
Spectrum File: 00007210.OXS LiveTime: 43,200.00

Calibrations:
Energy = 4.873E+01 +2.768E+00 * Chn Coeff. of Correlation: -0.998
Calibration Date: July 05, 2001 13:47:16 Std: TS4189b
Shape not Calibrated.
Efficiency = 3.157E-01 ± 4.216E-03
Calibration Date: July 05, 2001 15:46:51 Std: TS4189b

External Recovery No Ext.Recovery

Original Sample Amount: 1.000 ± 0.000 samp
Aliquot Amount: 1.000 ± 0.000 samp

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 ROI # 2	Po218	5556.4	6103.7	5828.9	2.8
2 ROI # 3	Po214	6589.7	7877.5	7232.4	2.8
3 ROI # 4	Po212	8394.4	8749.3	8735.5	5.5
4 ROI # 4	Po210	2521.2	5333.1	5064.8	467.8

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
ROI # 2	41.8 ± 6.8	4.20	0.058 ± 9.51E-03	Unknown
ROI # 3	13.8 ± 4.1	2.20	0.019 ± 5.63E-03	Unknown
ROI # 4	37.2 ± 6.2	0.80	0.052 ± 8.58E-03	Unknown
ROI # 4	6,691.8 ± 81.9	15.20	9.294 ± 0.114	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM. PROB	ACTIVITY (dpm/samp)	MDA (dpm)
ROI # 2	Po218	1.000	0.184 ± 0.030	4.44E-02
ROI # 3	Po214	1.000	0.061 ± 0.018	3.54E-02
ROI # 4	Po212	1.000	0.164 ± 0.027	2.61E-02
ROI # 4	Po210	1.000	29.436 ± 0.533	7.37E-02

Activity reported as of August 21, 2001 17:14:45

G A HAAS 515855

ANALYSIS REVIEWED BY: G A Haas

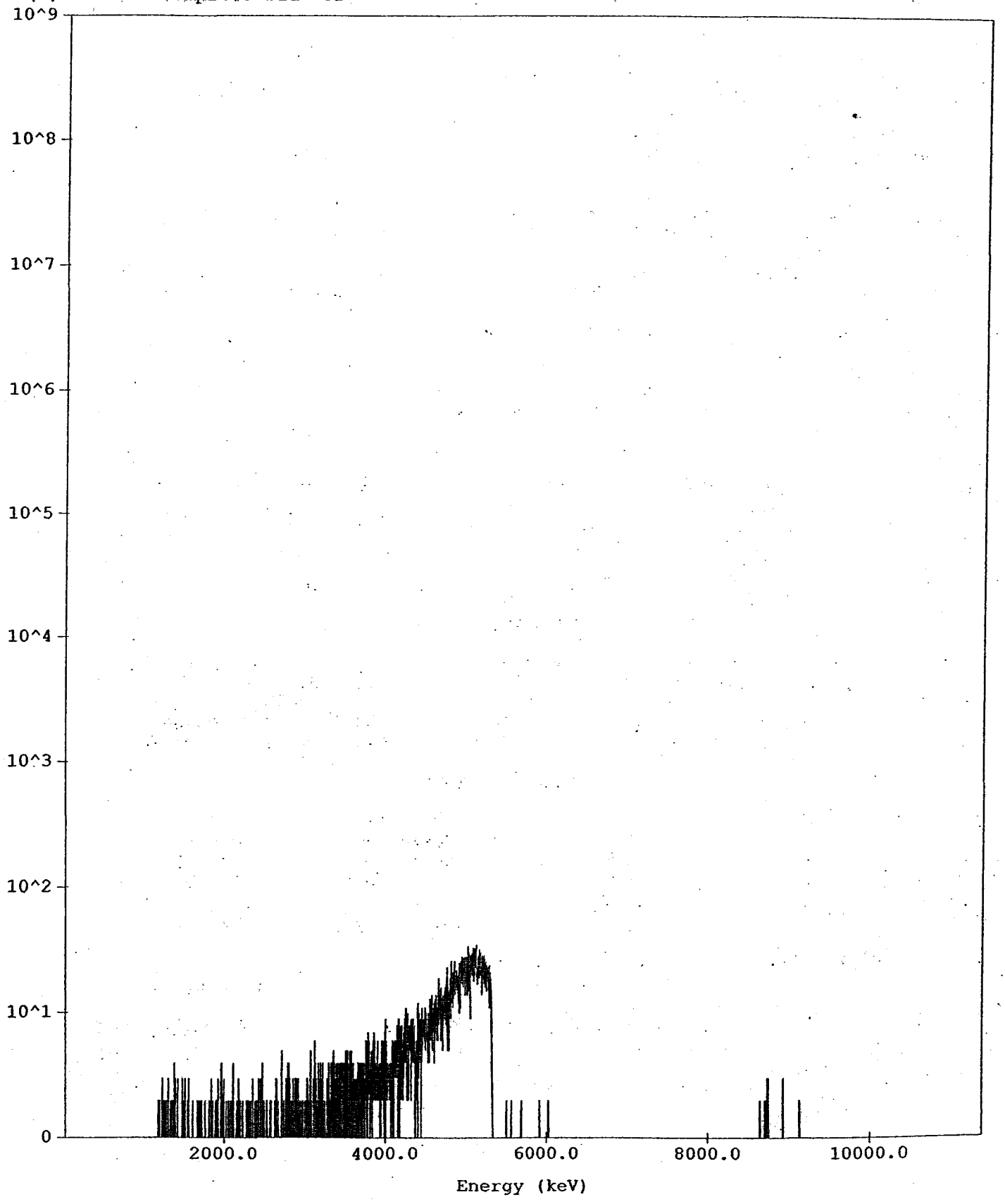
DOE added nuclides not indicated

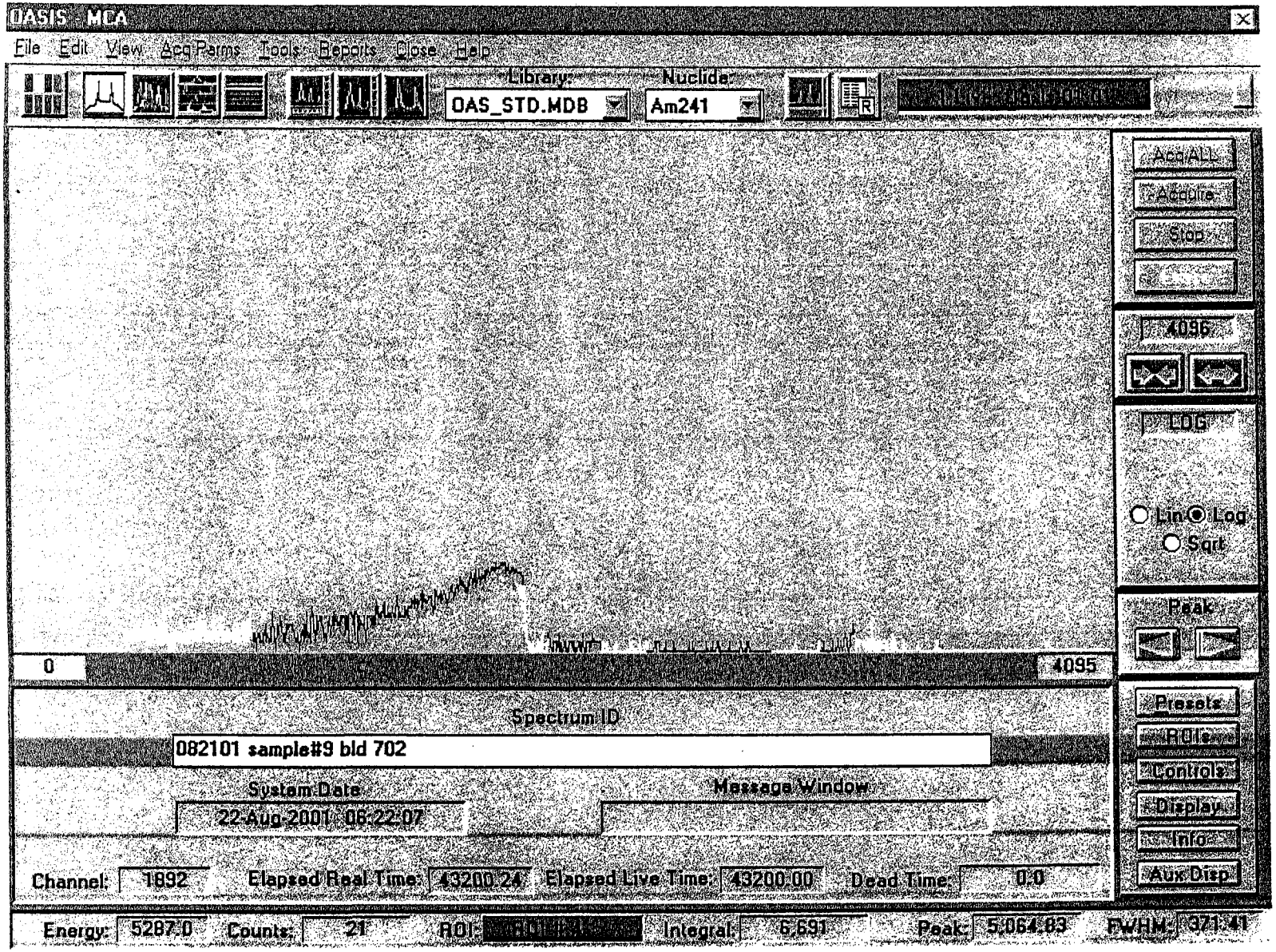
APPROVED BY: C J BIANCONI 520358 CJB 8.22.01

CJB 8.22.01

45

File(1): 00007210.OXS Date: 21-Aug-2001 17:14:45 LT: 43,200.00 RT: 43,200.24
ID(1): 082101 sample#9 bld 702




OASIS MCA
File Edit View Acq Parms Tools Reports Close Help
Library:
OAS_STD.MDB
Nuclide:
Am241
Acq ALL
Acquire
Stop
4096
LOG
Lin Log
Sqrt
Peak
0
4095
Presets
ROIs
Controls
Display
Info
Aux Disp
Spectrum ID
082101 sample#9 bld 702
System Date
22-Aug-2001 08:22:07
Message Window
Channel: 1892
Elapsed Real Time: 43200.24
Elapsed Live Time: 43200.00
Dead Time: 0.0
Energy: 5287.0
Counts: 21
ROI:
Integral: 6.691
Peak: 5,064.83
FWHM: 321.41

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Probability Plots

Based on the distribution modeled here, there is no visual or statistical evidence of DOE-added materials.

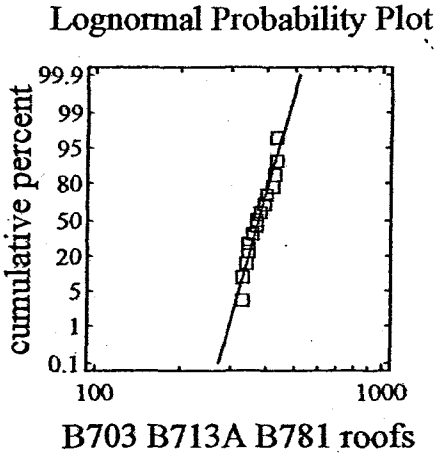
Probability Plots

Data variable: B703 B713A B781 roofs

Number of observations: 15
Number of values below minimum: 0
Number of values above maximum: 0

The StatAdvisor

This procedure creates seven different types of probability plots to help you determine whether B703 B713A B781 roofs comes from a particular type of distribution. After examining these plots, you may fit a distribution to the data by selecting the Distribution Fitting procedure.



Uncensored Data - B703 B713A B781 roofs

Goodness-of-Fit Tests for B703 B713A B781 roofs

Chi-Square Test

Lower Limit	Upper Limit	Observed Frequency	Expected Frequency	Chi-Square
at or below	344.247	3	2.50	0.10
344.247	362.327	3	2.50	0.10
362.327	377.521	2	2.50	0.10
377.521	393.352	2	2.50	0.10
393.352	414.01	1	2.50	0.90
above 414.01		4	2.50	0.90

Chi-Square = 2.20006 with 3 d.f. P-Value = 0.531933

Estimated Kolmogorov statistic DPLUS = 0.136711
Estimated Kolmogorov statistic DMINUS = 0.13489
Estimated overall statistic DN = 0.136711
Approximate P-Value = 0.941911

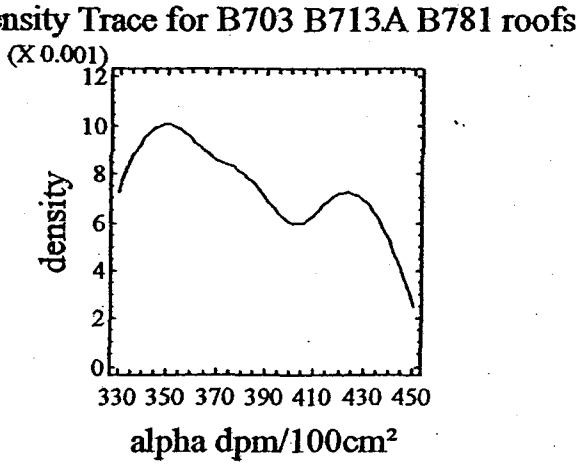
EDF Statistic	Value	Modified Form	P-Value
Kolmogorov-Smirnov D	0.136711	0.549769	>=0.10
Kuiper V	0.271601	1.11084	>=0.10
Cramer-Von Mises W^2	0.0475864	0.0251588	>=0.10
Watson U^2	0.0469878	0.0429398	>=0.10
Anderson-Darling A^2	0.359787	0.359787	>=0.10

*Indicates that the P-Value has been compared to tables of critical values specially constructed for fitting the currently selected distribution. Other P-values are based on general tables and may be very conservative.

The StatAdvisor

This pane shows the results of tests run to determine whether B703 B713A B781 roofs can be adequately modeled by a lognormal distribution. The chi-square test divides the range of B703 B713A B781 roofs into nonoverlapping intervals and compares the number of observations in each class to the number expected based on the fitted distribution. The Kolmogorov-Smirnov test computes the maximum distance between the cumulative distribution of B703 B713A B781 roofs and the CDF of the fitted lognormal distribution. In this case, the maximum distance is 0.136711. The other EDF statistics compare the empirical distribution function to the fitted CDF in different ways.

Since the smallest P-value amongst the tests performed is greater than or equal to 0.10, we can not reject the idea that B703 B713A B781 roofs comes from a lognormal distribution with 90% or higher confidence.



Survey Unit 776005 B703 Total Surface Contamination Investigation Results for Measurement #9

Total Surface Activity Survey						Quality Control Survey				
Meter Model:	NE Electra w/ DP6 Probe				Local Area Bkgd (cpm)	NE Electra w/ DP6 Probe			Local Area Bkgd (cpm)	
Instrument #:	1280	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Cal. Due Date:	9/13/01	N/A	N/A	N/A		N/A	N/A	N/A		
Efficiency (c/d):	0.210	N/A	N/A	N/A		N/A	N/A	N/A		

	Total Surface Activity Measurements (Note 1)					Quality Control Measurements				
Sample Location Number	Instrument #	Date	(cpm)	MDA (dpm/100 cm^2)	(dpm/100 cm^2)	Instrument #	Date	(cpm)	MDA (dpm/100 cm^2)	(dpm/100 cm^2)
1	1280	06/13/01	72.7	N/A	436.2					
2	1280	06/13/01	66.7	N/A	400.2					
3	1280	06/13/01	60.0	N/A	360.0					
4	1280	06/13/01	55.6	N/A	333.6					
5	1280	06/13/01	65.5	N/A	393.0					
6	1280	06/13/01	62.0	N/A	372.0					
7	1280	06/13/01	55.3	N/A	331.8					
8	1280	06/13/01	57.7	N/A	346.2					
9	1280	06/13/01	58	N/A	348.0					
10	1280	06/13/01	71.8	N/A	430.8					
11	1280	06/13/01	56.7	N/A	340.2					
12	1280	06/13/01	62.0	N/A	372.0					
13	1280	06/13/01	70.7	N/A	424.2					
14	1280	06/13/01	70.0	N/A	420.0					
15	1280	06/13/01	63.3	N/A	379.8					
				MIN	331.8					
				MAX	436.2					
				MEAN	379.2					
				SD	36.5					
				Transuranic DCGL$_W$	100					

Note 1 - An elevated reading of 60.1 cpm was present at this survey measurement location. An investigation was performed, and the above 15 survey measurments were obtained in accordance with TBD-00156 to verify log-normal distribution. As requested, in addition to the log-normal evaluation, a coupon sample was obtained. The activity was verified by alpha spec. analysis to be Po-210 vs. transuranic activity.

Survey Unit 776005 Buildings 703/713A/781 Total Surface Contamination Results

Total Surface Activity Survey						Quality Control Survey				
Meter Model:	NE Electra w/ DP6 Probe				Local Area Bkgd (cpm)	NE Electra w/ DP6 Probe			Local Area Bkgd (cpm)	
Instrument #:	1418	4064	3172	1264	7.3	4060	N/A	N/A	3.7	
Cal. Due Date:	11/15/01	9/13/01	7/26/01	12/4/01		11/17/01	N/A	N/A		
Efficiency (c/d):	0.208	0.221	0.213	0.224		0.220	N/A	N/A		
	Total Surface Activity Measurements					Quality Control Measurements				
Sample Location Number	Instrument #	Date	(cpm)	MDA (dpm/100 cm²)	(dpm/100 cm²)	Instrument #	Date	(cpm)	MDA (dpm/100 cm²)	(dpm/100 cm²)
1	1418	06/05/01	10.7	58	16.5					
2	1418	06/05/01	10.7	58	16.5					
3	1418	06/05/01	8.7	58	16.5					
4	1418	06/05/01	9.3	58	6.9					
5	1418	06/05/01	11.3	58	9.7					
6	1418	06/05/01	10.7	58	19.4					
7	1264	06/10/01	4.7	58	16.5					
8	1264	06/10/01	3.3	58	-12.4					
9	4060	06/13/01	Note 1	Note 1	Note 1					
10	4064	06/06/01	29.5 Note 2	Note 2	Note 2					
11	1418	06/05/01	25.3	58	86.7	4060	06/12/01	13.3	41	43.9
12	1418	06/05/01	12.3	58	24.2					
13	3172	06/06/01	12.7	58	26.1	4060	06/12/01	9.2	41	25.2
14	1418	06/05/01	14.0	58	32.3					
15	4060	06/13/01	13.3	58	29.0					
				MIN	-12.4					
				MAX	86.7					
				MEAN	22.1					
				SD	22.5					
				Transuranic $DCGL_W$	100					

Note 1 - An elevated reading of 60.1 cpm was present at this survey measurement location. An investigation was performed, and a coupon sample was obtained. The activity was verified by alpha spec. analysis to be Po-210 vs. transuranic activity.

Note 2 - An investigation was performed, and eight additional readings were obtained to verify the 1m² average was less than 100 dpm/100 cm². The average value of the nine measurements was 29.5 cpm and 106.9 dpm/100 cm². A media sample was obtained at this location and an isotopic analysis was performed. The total transuranic alpha activity was 21.5 dpm/100 cm² and the total uranium activity was 458.9 dpm/100 cm².

Survey Unit 776002 Buildings 702/710/712A Total Surface Contamination Results

Total Surface Activity Survey						Quality Control Survey				
Meter Model:	NE Electra w/ DP6 Probe			Local Area Bkgd (cpm)		NE Electra w/ DP6 Probe			Local Area Bkgd (cpm)	
Instrument #:	4066	1264	2400	4.5		4060	N/A	N/A	3.7	
Cal. Due Date:	10/24/01	12/4/01	9/15/01			11/17/01	N/A	N/A		
Efficiency (c/d):	0.227	0.224	0.221			0.220	N/A	N/A		
	Total Surface Activity Measurements					Quality Control Measurements				
Sample Location Number	Instrument #	Date	(cpm)	MDA (dpm/100 cm²)	(dpm/100 cm²)	Instrument #	Date	(cpm)	MDA (dpm/100 cm²)	(dpm/100 cm²)
1	4066	06/07/01	3.3	43	-5.2					
2	4066	06/07/01	8.0	43	15.5					
3	4066	06/07/01	4.7	43	0.9					
4	4066	06/07/01	2.1	43	-10.5					
5	4066	06/07/01	3.3	43	-5.2					
6	4066	06/07/01	10.7	43	27.4					
7	4066	06/07/01	9.3	43	21.2					
8	4066	06/07/01	6.0	43	6.7					
9	2400	06/12/01	Note 1	43	Note 1					
10	1264	06/10/01	6.7	43	9.8					
11	2400	06/12/01	15.0	43	46.3					
12	1264	06/10/01	2.7	43	-7.9					
13	1264	06/10/01	14.7	43	45.0	4060	06/12/01	13.3	41	43.6
14	1264	06/10/01	14.0	43	41.9					
15	1264	06/10/01	21.3	43	74.1	4060	06/12/01	17.3	41	61.8
				MIN	-10.5					
				MAX	74.1					
				MEAN	18.6					
				SD	25.4					
				Transuranic $DCGL_W$	100					

Note 1 - An investigation was performed, and fifteen additional readings were obtained. The data was plotted in accordance with TBD-00156 and the elevated activity was verified to be attributable to Po-210. An elevated reading of 57.3 cpm was present at this survey measurement location. In addition to the TBD-00156 evaluation, a coupon sample was obtained. The activity was verified by alpha spec. analysis to be Po-210 vs. transuranic activity.

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Attachment E

CDPHE Acceptance Letter of Cooling Tower Pre-Demolition Survey Report

STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director
Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
TDD Line (303) 691-7700
Located in Glendale, Colorado
http://www.cdphe.state.co.us

Laboratory and Radiation Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department of Public Health and Environment

September 26, 2001

Mr. Joseph A. Legare
Assistant Manager for Environment and Stewardship
Department of Energy Fax:303-[illegible]-5375
Rocky Flats Field Office
10808 Highway 93, Unit A
Golden, CO 80403-8200

Dear Mr. Legare:

Edd Kray of our staff has reviewed the Building 776/777 Cooling Tower Decommissioning Pre-Demolition Survey Report. Based upon his review, CDPHE concurs with the Type 1 characterization classification of the structures included in the Cooling Towers and satellite buildings.

Sincerely,

Steven H. Gunderson
RFCA Project Coordinator

cc: Tim Rehder, EPA
Dave Shelton, Kaiser-Hill

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 1

To GARY Schuetz	From
Co.	Co.
Dept.	Phone # 212-6082
Fax # 2497	Fax #

56/56